Serial Number: 10/628,594 Filing Date: July 28, 2003

Title: METHOD FOR MANUFACTURING AN INTERCONNECTED CIRCUIT BOARD ASSEMBLY AND SYSTEM

Assignee: Intel Corporation

## IN THE CLAIMS

Please amend the claims as follows.

- 1. (Canceled)
- 2. (Currently Amended) The method as claimed in claim [[1]] 11, wherein placing the one or more spacers comprises attaching the one or more spacers to the one or more first bond pads by forming the one or more spacers on the one or more first bond pads using a selective electroplating process.
- 3. (Currently Amended) The method as claimed in claim [[1]] 11, wherein placing the one or more spacers comprises attaching the one or more spacers to the one or more first bond pads by welding the one or more spacers to the one or more first bond pads.
- 4. (Currently Amended) The method as claimed in claim [[1]] 12, wherein placing the one or more spacers comprises attaching the one or more spacers to the one or more first bond pads by applying solder to the one or more first bond pads.
- 5. (Currently Amended) The method as claimed in claim [[1]] 12, further comprising, prior to aligning, applying a conductive material in proximity to areas where each of the one or more spacers will contact complementary ones of the one or more second bond pads.
- 6. (Original) The method as claimed in claim 5, wherein applying the conductive material comprises applying a conductive material in contact with each of the one or more spacers.
- 7. (Original) The method as claimed in claim 5, wherein the conductive material is a conductive paste.

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- (Original) The method as claimed in claim 5, wherein the conductive material is solder. 8.
- 9. (Original) The method as claimed in claim 5, wherein attaching the first circuit board to the second circuit board comprises heating the conductive material.
- 10. (Canceled)
- (Currently Amended) A method for manufacturing an interconnected circuit board 11. assembly, the method comprising:

fabricating a first circuit board having one or more first bond pads;

fabricating a second circuit board having multiple optoelectrical display elements and one or more second bond pads electrically connected to the multiple optoelectrical display elements;

placing one or more spacers on the one or more first bond pads of the first circuit board, wherein the one or more spacers are formed of a conductive material that remains in a solid form during attachment of the first circuit board to the second circuit board;

aligning the first circuit board with the second circuit board by engaging the spacers with openings in the second circuit board so that the one or more second bond pads of the second circuit board align with the one or more first bond pads, and the one or more second bond pads directly contacting the one or more spacers;

attaching the first circuit board to the second circuit board;

inserting an insulating material in an interface region between the first circuit board and the second circuit board The method as claimed in claim 10, wherein inserting the insulating material comprises injecting the insulating material into the interface region by a vacuum fill process after attaching the first circuit board to the second circuit board.

12. (Currently Amended) A method for manufacturing an interconnected circuit board assembly, the method comprising:

fabricating a first circuit board having one or more first bond pads;

fabricating a second circuit board having multiple optoelectrical display elements and one or more second bond pads electrically connected to the multiple optoelectrical display elements;

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placing one or more spacers on the one or more first bond pads of the first circuit board, wherein the one or more spacers are formed of a conductive material that remains in a solid form during attachment of the first circuit board to the second circuit board;

aligning the first circuit board with the second circuit board by engaging the spacers with openings in the second circuit board so that the one or more second bond pads of the second circuit board align with the one or more first bond pads, and the one or more second bond pads directly contacting the one or more spacers;

attaching the first circuit board to the second circuit board;

inserting an insulating material in an interface region between the first circuit board and the second circuit board. The method as claimed in claim 10, wherein inserting the insulating material comprises applying the insulating material to one of the first circuit board and the second circuit board, followed by partially curing the insulating material, prior to attaching the first circuit board to the second circuit board.

- 13. (Original) The method as claimed in claim 12, further comprising fully curing the insulating material after attaching the first circuit board to the second circuit board.
- 14. 23. (Canceled)
- 24. (Currently Amended) The method as claimed in claim [[23]] 31, further comprising: applying a conductive material in proximity to an area of the spacer and the first bond pad before attaching the first circuit board to the second circuit board.
- 25. (Previously Presented) The method as claimed in claim 24, wherein attaching the first circuit board to the second circuit board comprises heating the conductive material to allow the conductive material to directly contact the first bond pad and the second bond pad.
- 26. (Currently Amended) The method as claimed in claim [[23]] 31, further comprising: inserting an insulating material in an interface region between the first circuit board and the second circuit board.

Dkt: 884.264US2 (INTEL)

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27. (Previously Presented) The method as claimed in claim 26, wherein inserting the insulating material comprises applying the insulating material to only one of the first circuit board and the second circuit board before attaching the first circuit board to the second circuit board.

- (Previously Presented) The method as claimed in claim 26, wherein inserting the 28. insulating material comprises injecting the insulating material into the interface region.
- 29. (Previously Presented) The method as claimed in claim 28, wherein injecting the insulating material comprises isolating the insulating material from the first bond pad and the second bond pad.
- 30. (Canceled)
- (Currently Amended) A method comprising: 31.

placing at least one spacer on at least one first bond pad of a first circuit board such that the spacer directly contacts the first bond pad, wherein the spacer is formed of a conductive material that remains in a solid form during attachment of the first circuit board to a second circuit board;

aligning the first circuit board with the second circuit board by engaging the spacer with an opening in the second circuit board so that a second bond pad of the second circuit board aligns with the first bond pad, and the spacer directly contacts the second bond pad, the second circuit board including a plurality of optoelectrical display elements, one of the optoelectrical display elements being coupled to the second bond pad, wherein the optoelectrical display elements are isolated from each other by a dielectric material The method as claimed in claim 30, wherein the optoelectrical display elements are formed over a glass substrate of the second circuit board, and wherein the first bond pad is formed over a ceramic substrate of the first circuit board; and

attaching the first circuit board to the second circuit board.